

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application.

**COMPLETE LISTING OF THE CLAIMS:**

Claims 1-22 : (Canceled)

Claim 23 : (Currently Amended) An optical cross-connect,  
comprising:

a first plurality of input channels for through data traffic;

a second plurality of output channels for the through data traffic;

a plurality of first optical switching matrices comprising a first group of input ports which are connected to the input channels of the cross-connect, and a first group of output ports which are connected to the output channels of the cross-connect, for interconnecting the input channels and the output channels, each of the first optical switching matrices being operative for switching optical communication signals at a same wavelength assigned to the first optical switching matrices, the first optical switching matrices having a second group of output ports and a second group of input ports;

a group of one or more signal shaping units formed as wavelength converters each operative for converting an optical communication signal into an electrical signal, each signal shaping unit having an input connected to the second group of output ports and an output connected to the second group of input ports, each signal shaping unit being operative for regenerating the optical communication signal received at its input port to produce a regenerated optical signal having the same wavelength as before regeneration; and

switching elements for selectively connecting the output or the input of each of the signal shaping units to different ones of several of the second group of input ports or second group of output ports, respectively, of the first optical switching matrices.

Claim 24 : (Currently Amended) The optical cross-connect of claim 23, in that each signal shaping unit is operative for shaping only one optical communication signal.

Claim 25 : (Previously Presented) The optical cross-connect of claim 23, and at least one second optical switching matrix for selectively connecting the second group of output ports of the first optical switching matrices to one of the wavelength converters.

Claim 26 : (Previously Presented) The optical cross-connect of claim 25, and at least a third optical switching matrix for selectively connecting the wavelength converters to one of the second group of input ports of the first optical switching matrices.

Claim 27 : (Previously Presented) The optical cross-connect of claim 23, in that each input channel is connected to the first optical switching matrices via a wavelength demultiplexer and/or the first optical switching matrices are connected to each output channel via a wavelength multiplexer.

Claim 28 : (Previously Presented) The optical cross-connect of claim 23, and comprising inputs and/or outputs connected to the second group of input or output ports of the first optical switching matrices, for branching the through data traffic.

Claim 29 : (Previously Presented) The optical cross-connect of claim 23, in that each wavelength converter has a wavelength-tuneable transmitter part.

Claim 30 : (Previously Presented) The optical cross-connect of claim 23, in that the first group of input ports are connected to the input channels and/or the first group of output ports are connected to the output channels, respectively, without an optical switching matrix being inserted in between.

Claim 31 : (Previously Presented) The optical cross-connect of claim 23, in that each signal shaping unit comprises a photodiode for optical-to-electrical conversion, an electrical circuit connected thereto for impulse shaping and amplification, and a fixed wavelength laser diode driven by an electrical signal of said electrical circuit for regenerating the optical communication signal.